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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/594,779

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EXAMINER

DOLLINGER, MICHAEL M

ART UNIT

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1796

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/594,779	Applicant(s) FUJIBAYASHI ET AL.	
	Examiner MICHAEL DOLLINGER	Art Unit 1796	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. ____. |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>09/29/2006</u> . | 6) <input type="checkbox"/> Other: ____. |

DETAILED ACTION

Claim Objections

1. Claim 9 is objected to because of the following informalities: the preamble of claim 9 contains the phrase "resin powder composition" whereas the preambles of claims 1-8, 10, 11 and 13-19 contain the phrase "powdered resin composition".

Applicants are instructed to use consisted terminology throughout the claims in order to avoid confusion. Appropriate correction is required.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 9-11 recites the limitation "the fine particle powder (E) of a vinyl type copolymer" in line 3. There is insufficient antecedent basis for this limitation in the claim. Examiner suggests that the Applicants delete this phrase from claims 9-11 since all of the limitations implied by these claims are recited in claims 17-19.

4. Claims 17-19 recites the limitation "the fine particle powder (A) of a vinyl type copolymer" in lines 1-2 fir claims 17 and 18 and lines 2-3 in claim 19. There is insufficient antecedent basis for this limitation in the claim. Examiner suggests that the Applicants delete this phrase from claims 9-11 since all of the limitations implied by these claims are recited in claims 9-11.

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

6. Claims 5-7 and 15-18 are rejected under 35 U.S.C. 102(b) as being anticipated by Sapper et al. (US 6,296,903 B1).

7. Sapper et al. disclose the powder dispersions containing up to 100% by weight a polymer binder [column 9 lines 34-39] preferably urethane acrylate [column 12 line 22] and a polymer binder with an average particle size between 1 and 25 μm wherein the polymer is preferably an acrylate-styrene copolymer [column 5 lines 61-64] comprising carboxyl or hydroxyl groups [column 6 lines 1-4], crosslinkers including blocked diisocyanates [column 7 lines 50-54], and silica as a filler [column 7 lines 22-24]. Since the entire composition is a powder dispersion, it follows that the silica filler is a powder as well and reads on the limitation in claim 16 of “silica fine powder”.

8. Claims 1, 5, 7, 11 and 19 are rejected under 35 U.S.C. 102(b) as being anticipated by Koder et al. (JP 04-359045). An oral translation from USPTO translator Steven Sparr was used for Koder et al.

9. Koder et al. disclose a mixture of (A-2) thermoplastic polyurethane REZAMIN P-8765 [0029] and (B-5) a graft copolymer polymerized at 70°C [0024] from 1000 parts by

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weight of polybutadiene rubber particles with diameter of 0.15 μm [0022], 600 parts by weight of butyl acrylate [0024], 4 parts by weight of triaryl isocyanurate [0024], 380 parts by weight of methyl methacrylate [0025] and 20 parts by weight of glycidyl methacrylate [0025]. The graft copolymer (B-5) was coagulated and dried [0022] and blended with the polyurethane (A-1) in a Henschel mixer [0026]; this blending process reads on “dry-blending”. When the graft copolymer (B-5) is polymerized at 70°C the triaryl isocyanurate will crosslink with the glycidyl methacrylate monomers henceforth crosslinking the graft copolymer (B-5).

10. Claims 1, 2, 5-7, 9-12, 15 and 17-20 are rejected under 35 U.S.C. 102(b) as being anticipated by Ohmori et al. (US 6,177,508 B1) with further evidence provided by Minami (US 5,567,563).

11. Ohmori et al. disclose a polyurethane resin type composition for slush molding and molded article therefrom [column 1 lines 51-54] comprising (A) a thermoplastic polyurethane elastomer [column 1 lines 57-58] which may be a powder [column 7 line 9], (B) a plasticizer, (C) a blocked isocyanate [column 1 line 61] such as isocyanurate modified hexamethylene diisocyanate [column 5 lines 52-55], (D) a pigment and (E) 0.5 to 10 parts by weight per 100 parts by weight of (A) of a blocking inhibitor that is a resin powder with a particle diameter of 0.5 to 5 μm [column 1 lines 62-65; column 6 lines 20-21] and wherein (E) may be a styrenic and/or acrylic resin are described in Minami [column 6 lines 21-26], discussed below.

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12. Minami discloses styrenic and/or (meth)acrylic resins composed of (a) styrenic monomers including styrene [column 4 line 67] and hydroxyl-substituted styrenes [column 5 lines 6-7], (b) (meth)acrylic monomers including methacrylates [column 5 line 22] and hydroxyl-containing methacrylates such as hydroxy methacrylates [column 5 lines 18-19], and (c) other monomers including conjugated dienes [column 5 line 30] such as butadiene [column 5 line 35]. Examiner notes that butadiene reads on the claimed monomer (a02) [see page 12 lines 3-6 of Applicants' disclosure].

13. Regarding claims 1, 5 and 15, Applicants claim the vinyl type copolymer as having a crosslinked structure and preferably crosslinked by a polyisocyanate at hydroxyl, carboxyl, or amino functional group. Examiner takes the position that the hydroxyl functionalized styrenic and/or acrylic resin blocking inhibitor (E) will be at least partially crosslinked by the blocked polyisocyanate (C).

14. Regarding claims 11 and 19, Ohmori et al. disclose the thermoplastic polyurethane powder (A) in powder form made by either a non-aqueous or aqueous dispersion and subsequent drying [column 4 line 59 to column 5 line 4] and the slush molding composition prepared by mixing the polyurethane powder (A) containing blocked isocyanate (C) with a blend of plasticizer (B) and pigment (D) followed by adding resin (E) to the powder mixture [column 7 lines 12-14]. Since water is not added and the plasticizers (B) are largely hydrophobic [column 5 lines 30-46], this disclosed mixing process reads on "dry blending".

Claim Rejections - 35 USC § 103

15. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

16. Claims 8 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ohmori et al. (US 6,177,508 B1) in view of Patnaik (Patnaik, Pradyot (2003). Handbook of Inorganic Chemicals. McGraw-Hill.).

17. Ohmori et al. do not explicitly disclose silica fine powder added in the polymer mixture. However, Ohmori et al. do teach that the pigment (D) may be any known organic pigments [column 6 lines 7-9].

18. Patnaik teaches that amorphous silica is used as a pigment [page 826 2nd paragraph].

19. It would have been obvious to one having ordinary skill in the art at the time the invention was made to have made a powdered resin composition comprising a polyurethane dispersion, vinyl type copolymer dispersion and a silica powder because Ohmori et al. teach that it is within the skill of the art to produce a slush molding composition comprising a polyurethane, a styrenic and/or acrylic polymer and an inorganic pigment and Patnaik teaches that it is within the skill of the art to add silica as a pigment. One would have been motivated to do this because Ohmori et al. suggest the

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use of any inorganic pigment known in the art. Absent any evidence to the contrary, there would have been a reasonable expectation of success in using silica as a pigment in the composition of Ohmori et al.

20. Claims 3, 4, 13 and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ohmori et al. (US 6,177,508 B1) with further evidence provided by Minami (US 5,567,563) in view of Tanaka et al. (US 4,737,432).

21. The styrenic and/or acrylic resins of Ohmori et al., described in Minami do not disclose monomers of polyhydric alcohol poly(meth)acrylate or ethylene glycol dimethacrylate.

22. Tanaka et al. disclose ordinary binder resins for toners [column 12 lines 33-34] with include styrene-acrylate copolymers [column 12 lines 39-44] and carboxyl functional acrylic copolymers with comonomers including ethylene glycol dimethacrylate [column 13 lines 47-48], methyl acrylate, methyl methacrylate, and many other (meth)acrylate monomers [column 13 lines 34-37]. Most of these monomers are listed as suitable methacrylate monomers of the binder resins of Minami, as discussed above [column 5 lines 13-27 of Minami]. Henceforth, Tanaka et al. teaches that ethylene glycol dimethacrylate is functionally equivalent to the acrylic monomers used in the acrylic resins of Ohmori et al. described in Minami. It is *prima facie* obvious to combine two compositions each of which is taught by the prior art to be useful for the same purpose, in order to form a third composition to be used for the same purpose. Please

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see MPEP § 2144.06. Ethylene glycol dimethacrylate also reads on polyhydric alcohol poly(meth)acrylate.

23. It would have been obvious to one having ordinary skill in the art at the time the invention was made to have used methyl methacrylate and ethylene glycol dimethacrylate in the slush molding compositions of Ohmori et al. because Ohmori et al. teach that styrenic and/or acrylic toner binder resins described in Minami et al. are suitable for the blocking inhibitor and Tanaka et al. teach that ethylene glycol dimethacrylate is functionally equivalent to the (meth)acrylate monomers described in Minami et al. used in combination with methyl methacrylate. Absent any evidence to the contrary, there would have been a reasonable expectation of success of forming a blocking inhibitor for the slush molding composition of Ohmori et al. with methyl methacrylate and ethylene glycol dimethacrylate.

International Search Report

24. The documents cited on the International Search Report JP 2000-351850 A, JP 2002-88210, JP 6-306248 A and JP 2-38453 A do not anticipate the invention of the present claim. While these documents disclose slush molding compositions with the claimed polyurethane and vinyl type copolymers, they do not disclose the polymers as discrete powders as claimed in independent claims 1 and 5.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to MICHAEL DOLLINGER whose telephone number is (571)270-5464. The examiner can normally be reached on Monday - Thursday 7:30AM-6:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Randy Gulakowski can be reached on 571-272-1302. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

MICHAEL DOLLINGER
Examiner
Art Unit 1796

/MMD/

/Randy Gulakowski/

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Supervisory Patent Examiner, Art Unit 1796